

1. This international preliminary report on patentability (Chapter I) is issued by the International Bureau on behalf of the International Searching Authority under Rule 44 *bis*.1(a).

2. This REPORT consists of a total of 4 sheets, including this cover sheet.

In the attached sheets, any reference to the written opinion of the International Searching Authority should be read as a reference to the international preliminary report on patentability (Chapter I) instead.

3. This report contains indications relating to the following items:

- |                                     |              |   |
|-------------------------------------|--------------|---|
| <input checked="" type="checkbox"/> | Box No. I    | Basis of the report   |
| <input type="checkbox"/>            | Box No. II   | Priority  |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability  |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention  |
| <input checked="" type="checkbox"/> | Box No. V    | Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application  |
| <input type="checkbox"/>            | Box No. VIII | Certain observations on the international application   |

4. The International Bureau will communicate this report to designated Offices in accordance with Rules 44*bis*.3(c) and 93*bis*.1 but not, except where the applicant makes an express request under Article 23(2), before the expiration of 30 months from the priority date (Rule 44*bis* .2).

Date of issuance of this report  
26 June 2006 (26.06.2006)

Authorized officer

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# PATENT COOPERATION TREATY

From the  
INTERNATIONAL SEARCHING AUTHORITY

To:

**PCT**

**TRANSLATION**

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

|  |   |   |
|--|---|---|
| <p>To:</p>   |   | <p>Date of mailing<br/>(day/month/year)</p>                 |
| <p>Applicant's or agent's file reference<br/><b>K1057</b></p>                            |   | <p><b>FOR FURTHER ACTION</b><br/>See paragraph 2 below</p>  |
| <p>International application No.<br/><b>PCT/JP2004/013123</b></p>                        | <p>International filing date (day/month/year)<br/><b>09.09.2004</b></p> | <p>Priority date (day/month/year)<br/><b>10.09.2003</b></p> |
| <p>International Patent Classification (IPC) or both national classification and IPC</p> |   |   |
| <p>Applicant<br/><b>NTN CORPORATION</b></p>  |   |   |

|                                     |  |  |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
|-------------------------------------|--|--|-----------|----------------------|--------------------------|------------|----------|--------------------------|-------------|--|--------------------------|------------|----------------------------|-------------------------------------|-----------|--|--------------------------|------------|-------------------------|--------------------------|-------------|--|--------------------------|--------------|---|
| 1.                                  | <p>This opinion contains indications relating to the following items:</p> <table style="width: 100%;"> <tr> <td style="width: 5%;"><input checked="" type="checkbox"/></td> <td style="width: 25%;">Box No. I</td> <td>Basis of the opinion</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. II</td> <td>Priority</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. III</td> <td>Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. IV</td> <td>Lack of unity of invention</td> </tr> <tr> <td><input checked="" type="checkbox"/></td> <td>Box No. V</td> <td>Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VI</td> <td>Certain documents cited</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VII</td> <td>Certain defects in the international application</td> </tr> <tr> <td><input type="checkbox"/></td> <td>Box No. VIII</td> <td>Certain observations on the international application</td> </tr> </table> | <input checked="" type="checkbox"/>  | Box No. I | Basis of the opinion | <input type="checkbox"/> | Box No. II | Priority | <input type="checkbox"/> | Box No. III | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability | <input type="checkbox"/> | Box No. IV | Lack of unity of invention | <input checked="" type="checkbox"/> | Box No. V | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement | <input type="checkbox"/> | Box No. VI | Certain documents cited | <input type="checkbox"/> | Box No. VII | Certain defects in the international application | <input type="checkbox"/> | Box No. VIII | Certain observations on the international application |
| <input checked="" type="checkbox"/> | Box No. I  | Basis of the opinion   |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. II   | Priority   |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. III  | Non-establishment of opinion with regard to novelty, inventive step and industrial applicability   |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. IV   | Lack of unity of invention   |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| <input checked="" type="checkbox"/> | Box No. V  | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VI   | Certain documents cited  |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VII  | Certain defects in the international application   |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| <input type="checkbox"/>            | Box No. VIII   | Certain observations on the international application  |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| 2.                                  | <p><b>FURTHER ACTION</b></p> <p>If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.</p> <p>If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.</p> <p>For further options, see Form PCT/ISA/220.</p>   |  |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |
| 3.                                  | <p>For further details, see notes to Form PCT/ISA/220.</p>   |  |           |                      |                          |            |          |                          |             |  |                          |            |                            |                                     |           |  |                          |            |                         |                          |             |  |                          |              |   |

|   |                           |
|---|---------------------------|
| <p>Name and mailing address of the ISA/JP</p> | <p>Authorized officer</p> |
| <p>Facsimile No.</p>                          | <p>Telephone No.</p>      |

WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY

International application No.

PCT/JP2004/013123

Box No. I Basis of this opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.

☐

This opinion has been established on the basis of a translation from the original language into the following language  
\_\_\_\_\_, which is the language of a translation furnished for the purposes of international search (under Rule 12.3 and 23.1(b)).

2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:

a. type of material

☐

a sequence listing

☐

table(s) related to the sequence listing

b. format of material

☐

in written format

☐

in computer readable form

c. time of filing/furnishing

☐

contained in the international application as filed.

☐

filed together with the international application in computer readable form.

☐

furnished subsequently to this Authority for the purposes of search.

3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table(s) relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.

4. Additional comments:

**WRITTEN OPINION OF THE  
INTERNATIONAL SEARCHING AUTHORITY**

International application No.  
PCT/JP2004/013123

| Box No. V   | Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement |             |     |
|---|--|-------------|-----|
| <b>1. Statement</b>   |  |             |     |
| Novelty (N)   | Claims   | <u>1-10</u> | YES |
|   | Claims   | _____       | NO  |
| Inventive step (IS)   | Claims   | _____       | YES |
|   | Claims   | <u>1-10</u> | NO  |
| Industrial applicability (IA)   | Claims   | <u>1-10</u> | YES |
|   | Claims   | _____       | NO  |
| <b>2. Citations and explanations:</b><br><br><p style="margin: 0;">The inventions described in claims 1-2, 4-5, and 7-8 do not appear to involve an inventive step based on document 1 (JP 11-129703 A (NSK Ltd.) 18 May 1999, claims, Figs. 9-10, &amp; EP 854303 A2 &amp; JP 10-196661 A &amp; JP 11-5404 A &amp; US 6280096 B1 &amp; US 2001/0046339 A1 &amp; US 6422758 B1 &amp; US 2002/0146185 A1 &amp; EP 1312821 A2 &amp; EP 1314903 A2 &amp; US 2003/0103705 A1 &amp; EP 1319854 A2) cited in the ISR and document 2 (JP 5-277615 A (NTN Corp.) 26 October 1993, paragraph 0012, Fig. 3, (Family: none)) cited in the ISR. Setting the hub ring (inner member) described in document 1 at the fiber flow angle to the orbital plane described in document 2 would be obvious to a person skilled in the art.</p> <p style="margin: 0;">The inventions described in claims 3, 6, and 9-10 do not appear to involve an inventive step based on document 3 (JP 2003-97569A (NSK Ltd) 03 April 2003, claims, paragraph 0021, Fig. 1, (Family: none)) cited in the ISR and document 2 cited in the ISR. Setting the outer ring (outer member) described in document 3 at the fiber flow angle to the orbital plane described in document 2 would be obvious to a person skilled in the art.</p> |  |             |     |